3. rejects claim 1 under 35 U.S.C. § 102(e) as being antici-pated by United States Patent no. 6,324,217 entitled "Method and Apparatus for Producing an Information Stream Having Still Images" which issued November 27, 2001, on an application filed July 8, 1998, by Donald F. Gordon ("the Gordon patent");

4. rejects claims 2, 3, and 5-7 under 35 U.S.C. § 103(a) as being unpatentably obvious based upon the Gordon patent in view of United States Patent no. 5,838,678 entitled "Method and Device for Preprocessing Streams of Encoded Data to Facilitate Decoding Streams Back-to Back" which issued November 17, 1998, on an application filed July 24, 1996, by Joseph W. Davis and Shawn M. Hayes ("the Davis, et al. patent"); and

5. rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentably obvious based upon the Gordon patent in view of United States Patent no. 6,310,919 entitled "Method and Apparatus for Adaptively Scaling Motion Vector Information in an Information Stream Decoder" which issued October 30, 2001, on an application filed September 25, 1998, by Dinei Afonso Ferreira Florencio ("the Florencio patent").

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Description of the Amendments

The paragraph beginning at page 8, line 22 has been amended to improve its readability.

Claim 4 has been amended to traverse the objection set forth in the Examiner's Action.

The Cited References

The Gordon Patent

The invention disclosed in the Gordon patent provides a rapid, computationally efficient method for generating well-behaved movie information screen ("MIS") information streams. The MIS feature comprises a substantially motionless image, such as from a movie or other audio-visual program, displayed on a subscriber's display device. The Gordon patent states that the then:

> existing methods for generating MIS information streams disadvantageously require[d] extensive encoding of video information to produce well-behaved bitstreams, i.e., bitstreams that do not cause decoder buffer underflow or overflow. For example, an MIS information stream generated by repeatedly encoding an image will produce a well-behaved MIS bitstream at the cost of significant computational resources and time (e.g., two to 30 minutes to encode a two minute MIS display or presentation)."
> (Col. 1, line 51 - col. 2, line 3)

The Gordon patent in column 2 beginning at line 10 expressly states that:

> [t]he invention comprises a method and apparatus for processing an image to produce an encoded video information stream comprising **a sequence of replicated group of picture (GOP) information structures, each GOP including an intra-coded frame (I-frame) and a plurality of forward predictive coded frames (P-frames)**, wherein the I-frame of the initial GOP is formed by intra-coding the still

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image, and each P-frame comprises, e.g., a substantially zero motion vector P-frame.

<center>*   *   *</center>

Specifically, a method according to the invention for processing an image to produce a compressed information stream comprises the steps of: intra-coding the image to produce an intra-coded information frame (I-frame); **associating the intra-coded information frame with a plurality of forward predicted information frames (P-frames) to form a group of pictures (GOP)**; and replicating the GOP to produce the compressed information stream.

An apparatus according to the invention for processing an image to produce an MPEG-like information stream comprises: **a frame encoder**, for producing an intra-coded (I-frame) in response to said image, **and for producing N number of forward predicted information frames (P-frames)** in response to said I-frame, where N is an integer; **a memory, for storing** said I-frame **and said N number of P-frames**; and a controller, for causing said memory to repetitively output said I-frame and said N number of P-frames as a video elementary stream.

Legal Principles Applicable to Rejections Under 35 U.S.C. 102

[F]or anticipation under 35 U.S.C. § 102, the reference must teach **every aspect** of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. Manual of Patent Examining Procedure ("MPEP") July 1998 § 706.02, p. 700-10 (Emphasis supplied)

"Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." Rockwell International Corporation v. The United States, 147 F.3d 1358, 1363, 47 USPQ2d 1027, 1031 (Fed. Cir. 1998) citing National Presto Indus. v. West Bend Co., 76 F.3d 1184, 1189, 37 USPQ2d 1685, 1687 (Fed. Cir. 1966). In determining anticipation under 35 U.S.C. § 102, **functional language, preambles, and language in "whereby," "thereby," and "adapted to" clauses**

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<u>cannot be disregarded</u>. <u>Pac-Tec, Inc. v. Amerce Corp.</u>, 903 F.2d 796, _____, 14 USPQ2d 1871, 1876 (Fed. Cir. 1990). (Emphasis supplied.)

"The mere fact that a certain thing may result from a given set of circumstances in not sufficient" for inherency. <u>Ex parte Skinner</u>, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). "<u>Inherency, . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.</u>" <u>Continental Can Co. USA Inc. v. Monsanto Co.</u>, 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991) (Emphasis supplied.) (Citations omitted.) Inherency is a rationale associated with anticipation, and as such, the examiner must cite "page and line" of the prior art to justify an obviousness rejection based on the inherency theory. <u>Ex parte Schricter</u>, 56 USPQ2d 1723 (Bd. Pat App. a& Int. 2000)

Argument

Applicant respectfully submits that claims 1-7 as presently amended traverse all bases for rejection and objection set forth in the Examiner's Action dated February 12, 2002, Paper no. _.

Rejection Under 35 U.S.C. § 102(e)

In rejecting claim 1 under 35 U.S.C. § 102(e), the Examiner's Action dated February 12, 2002, at the bottom of page 3, alleges that in col. 7 at lines 26-49 the Gordon patent discloses:

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decoding of the compressed video bitstream produces frames of video which produce images that do not appear to pulse visually . . . . .

Set forth below is the text of the Gordon patent that appears in col. 7 at lines 26-49.

> While the invention may be utilized to encode a sequence of input images, the "image rate" is bounded by the GOP structure, the bit budget allotted to each GOP and other factors. Thus, assuming the shortest GOP (a single I-frame), the primary limiting parameter will be the bit budget of the GOP structure and the bitstream. Since 1-frames utilize a large amount of data, the invention is not suitable for high frame rate video. However, for low frame rate video applications (i.e., a very few frames per second), such as video telephony applications, the invention provides an economical method and apparatus for producing an information stream suitable for transport via a standard communication link.

The cited text quoted above from the Gordon patent mentions:

1.   "input images;"

2.   "'image rate';"

3.   "limiting parameters;"

4.   "I-frames'"

5.   "high frame rate video;"

6.   "low frame rate video;"

7.   "information stream;" and

8.   "communication link."

The cited text quoted above from the Gordon patent omits all of the following terms:

1.   "decode" or any equivalent term;

2.   "visual" or any equivalent term; and

3.   "image" or any equivalent term.

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Thus, based upon the text quoted above from the Gordon patent, the Applicant respectfully submits that, contrary to the allegation set forth in the Examiner's Action quoted above, the reference fails to disclose that decoding a video bitstream compressed as taught in that reference generates frames of video which produce images that do not appear to pulse visually.

Since for the reasons set forth above the Gordon patent fails to disclose that decoding a video bitstream compressed in accordance with that reference generates frames of video which produce images that do not appear to pulse visually, the only possible basis left upon which claim 1 could be validly rejected under 35 U.S.C. § 103(e) is if a video bitstream encoded in accordance with the disclosure of the Gordon reference were to inherently produced a compressed bitstream which upon decoding generates frames of video which produce images that do not appear to pulse visually. The accompanying declaration of Mark D. Conover irrefutably establishes that the disclosure in the Gordon patent does not inherently produced a compressed bitstream which upon decoding generates frames of video which produce images that do not appear to pulse visually. Therefore, the Applicant respectfully submits that claim 1 traverses rejection under 35 U.S.C. § 102(e) because it fails to "teach **every aspect** of the claimed invention either explicitly or impliedly."

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<u>Declaration Under 37 C.F.R. § 1.131</u>

Assuming contrary to fact that the disclosure of the Gordon patent anticipated claim 1 under 35 U.S.C. § 102(e), the accompanying declaration of Mark D. Conover establishes that the Applicant invented the subject matter of the pending claims in the United States before the effective date of the Gordon patent, i.e. the reference's July 8, 1998, filing date. For the reasons set forth in greater detail below, the claims pending in the present application encompass an invention which differs from that claimed in the Gordon patent. Moreover, the present application was filed only three (3) months after the filing of the Gordon patent.

The Gordon patent has three (3) independent claims, i.e. claims 1, 10 and 13, each of which encompasses subject matter which differs from the claims pending in this patent application. Independent method claims 1 and independent apparatus claims 13 each respectively require replicating a group of pictures ("GOP"), a requirement which claims pending in the present application omit. Independent method claim 1 expressly includes a method step of "replicating said GOP . . . ." Independent apparatus claim 13, using a text which differs from that in independent methoc claim 1, includes the same limitation by reciting:

> a controller, for causing said memory to repetitively output said I-frame and said N number of P-frames as a video elementary stream.

Independent method claim 10 expressly requires:

> encoding, <u>using a preferential bit allocation determined with respect to a group of pictures (GOP) bit budget</u>, an

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image to produce an intra-frame (I-frame) encoded video
information frame. (Emphasis supplied

All the claims pending in the present application omit the
limitation quoted above from independent method claims 13 of the
Gordon patent.

Thus, for the reasons set forth above, the Gordon patent is
not properly prior art to the present application, and the
Applicant respectfully requests that all rejections of claims based
upon that reference be withdrawn.

Rejection Under 35 U.S.C. § 103(a)

Because for the reasons set forth above the Gordon patent
doesn't anticipate pending claim 1 under 35 U.S.C. § 102(e), and
because for the reasons set forth above the Gordon patent is
properly not even prior art to the pending claims, a combination of
other references with the Gordon patent cannot possibly render
those claims obvious under 35 U.S.C. § 103(a). Therefore, the
Applicant respectfully submits that claims 2-7 traverse the
rejections under 35 U.S.C. § 103(a) set forth in the Examiner's
Action dated February 12, 2002, which all rely upon the Gordon
patent.

Rejection Under 35 U.S.C. § 112

The Examiner's Action dated February 12, 2002, as well as all
prior Examiner's Actions have rejected claims 2 and 3 under 35
U.S.C. § 112, second paragraph, for their use of terminology which

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refers respectively to the "MPEG-1 standard" and "MPEG-2 standard."
Instead of repeating here again arguments presented in traversing
those prior rejections of claims 2 and 3, the Applicant hereby
incorporates by reference traversals of the rejections of claims 2
and 3 under 35 U.S.C. § 112, second paragraph, that appear in prior
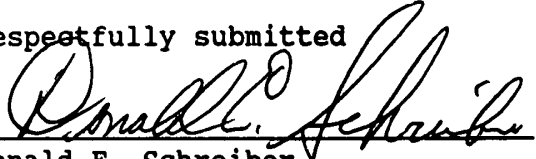responses to Examiner Actions.

However, in addition the preceding incorporation of traversals
of the rejections of claims 2 and 3 under 35 U.S.C. § 112, second
paragraph, that appear in prior responses to Examiner Actions, the
applicant observes that independent claim 13 of the Gordon patent,
which because it appears in an issued United States possesses a
presumption of validity, refers to the MPEG standard. Since valid
claim 13 in the Gordon patent refers to the MPEG standard, the
Applicant respectfully submits that the Gordon patent proves that
claims 2 and 3 pending in the present application traverse
rejection under 35 U.S.C. § 112, second paragraph, and respectfully
requests that rejection of claims 2 and 3 be withdrawn.

Conclusion

For the reasons set forth above, the Applicant respectfully
submits that claims 1 through 7 presently pending in this applica-
tion for letters patent traverse the objection and all rejections
set forth in the Examiner's Action dated February 12, 2002, Paper
No. __. Because all claims presently pending in this application
are allowable, the Applicant respectfully requests that the
objection and all rejections set forth in the Examiner's Action

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dated February 12, 2002, Paper No. __, be withdrawn, and that this

patent application pass promptly to issue.

Respectfully submitted

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Serial no : 09/168,644

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For : ENCODING A STILL IMAGE
INTO COMPRESSED VIDEO

Art Unit : 2613

Commissioner of Patents
Washington, D.C. 20231

AMENDMENTS MADE BY REWRITING
THAT ARE MARKED-UP TO SHOW ALL CHANGES
RELATIVE TO THE PRIOR VERSION

In the Specification

A paragraph beginning at page 8, line 22 is amended as follows.

While decoding the compressed video bitstream 42 assembled as described above reproduces frames of motion video that are generally visually acceptable, reproduced frames of still images, particularly still images containing text, are in many instances, if not most, visually unacceptable. As described above, the process depicted in FIG. 3 of separately computing the DCTs 82 for the luminance blocks 76 and the chrominance blocks 78, quantizing the DCT coefficients, zigzag ordering of quantized DCT coefficients, run-length encoding, and finally Huffman coding generally remove a significant

amount of high frequency data from MPEG compressed I frames 54. Decoding of I frames 54 from which high frequency data has been removed produces an image having less detail, e.g. sharp corners and abrupt transitions from one color or intensity to another, than appeared in the uncompressed frame of video data. However, MPEG compression does not completely discard this high frequency data, i.e. image detail. MPEG compression attempts to encode this high frequency data into successive P frames 56 and B frames 58 that use the I frame 54 as a reference, either directly or indirectly. Consequently, after decoding the lesser detail in each I_frame 54 of a still image, decoding subsequent P frames 56 and B frames 58 increases, over time, the detail present in the video images until the next I frame 54 is decoded.

In the Claims

Claim 4 has been amended as follows.

4. (Amended) The method of claim 1 wherein parameters [employed] used in encoding the data for the still image produce an amount of data for the I frame that approaches, but remains less than, storage capacity of a buffer memory included in a decoder
5 that stores the compressed video bitstream.

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